

What is claimed is:

1. An insertion-molding method of inserting a spring into a case of a multi-actuator selectively performing audio and vibration generating operations, the method comprising:

5 placing on a case injection mold a spring array, which includes a plurality of springs, using an external structure integrally formed with the spring array;

forming the case by injecting resin of a liquid state into the case injection mold; and

10 separating the external structure from the springs.

2. The method of claim 1, wherein the placing of the spring array on the case injection mold comprises:

inserting a guide pin of the case injection mold into a guide hole of the external structure.

15 3. The method of claim 1, wherein the placing of the spring array on the case injection mold comprises:

inserting one or more guide pins of the case injection mold into corresponding ones of one or more guide holes of the external structure.

4        The method of claim 1, wherein the separating of the external structure from the case comprises:

forming a V-shaped notch between the external structure and the case.

5        5.        An insertion-molding method of forming a multi-actuator selectively performing audio and vibration generating operations and including a case, a vibration plate disposed on a first portion of the case to generate an audio signal, a magnet, a spring integrally formed with a second portion of the case to elastically support the magnet and a weight  
10        with respect to the case, and a vibration coil disposed on a third portion of the case to form a magnetic field with the magnet to generate the vibration signal, the method comprising:

placing on a case injection mold a spring, which includes a plurality of springs, using an external structure integrally formed with the spring;

15        injection-molding the case and the spring;

forming a notch between the case and the external structure; and

separating the external structure from the springs with respect to the notch.

6. A multi-actuator selectively performing audio and vibration generating operations and including a case, a vibration plate disposed on a first portion of the case to generate an audio signal, a magnet, a spring integrally formed with a second portion of the case to elastically support the magnet and a weight with respect to the case, and a vibration coil disposed on a third portion of the case to form a magnetic field with the magnet to generate the vibration signal, comprising:

a portion of a notch shape formed on an outer surface of the case.

7. The multi-actuator of claim 6, wherein the portion of the notch is a portion of a V-shape.

8. The multi-actuator of claim 6, wherein the outer surface of the case is disposed on a portion of the case extended from the spring in a direction parallel to a major surface of the spring.

9. The multi-actuator of claim 6, wherein the spring vibrates with respect to the major surface.

10. The multi-actuator of claim 6, wherein the spring comprises a first sub-spring and a second sub-spring, the weight is disposed between the first and second sub-springs, the outer surface of the case comprises a first sub-surface and a second sub-surface corresponding to respective first and second sub-springs, and the first and second sub-surfaces of the case are disposed on portions of the case extended from corresponding ones of the springs in a direction parallel to each major surface of the springs.